Self-beliefs and student goal achievement

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Two preliminary studies are presented investigating the self-beliefs that may affect goal achievement in a student population. In Study 1, goal achievement on an abstract task, where goals are externally set by others, is considered in relation to students' levels of optimism. In Study 2, goal achievement on academic performance, where goals are internally set by ones' self, is considered in relation to students' academic confidence. Optimism was related to goal achievement in Study 1 but only when the goal was believed to be difficult to achieve; optimistic students achieved higher scores than pessimistic students. In Study 2 confidence was related to goal achievement; students with moderate levels of academic confidence were well-calibrated in their grade predictions whereas those with high levels of academic confidence were overconfident in their grade predictions. The results are discussed in relation to student motivation.

Keywords: goal achievement; goal-setting; optimism; confidence.

Y OBSERVING and studying students' goal achievement an insight can be developed into the range of ways in which students perform, engage, and evaluate within the educational system (Roebken, 2007). It has been concluded that overall academic performance can be determined by students' beliefs about their ability, effort required, goal-setting, and the perceived difficulty of the task (Elliot & McGregor, 2002; McCollum, 2005; Weiner, 1985). Indeed, according to Sander and Sanders (2006) 'increasingly, the self and self-beliefs are being seen as key indices of achievement motivation' (p.29).present research is a preliminary investigation of some of the self-beliefs that may affect goal achievement in a student population.

Goal-setting and goal achievement

It has been well established that giving someone a goal to aim towards, as opposed to advising them to do their best, improves performance; probably due to reducing ambiguity over what is expected (Locke & Latham, 2002). Goal-setting as a motivational tool is well established in the business environment but it has been suggested that it is also applicable in the educational arena and that setting goals for educational purposes enhances performance (Elliot, McGregor & Gable, 1999; Harackiewicz et al., 2002).

There are many factors that must be considered in order for goal-setting to be an effective motivational tool and to enhance performance. For example, the goal should be clear and specific, and it should be achievable within the individuals' capability yet still be challenging (Locke & Latham, 2002).

External vs. Internal goals

Many studies utilising goal-setting provide information on how others have performed, or normative information (Weingart & Weldon, 1991). This information aids individuals to draw conclusions regarding their perception of the difficulty of the task and their probability of successfully achieving the goal. However, not all goals are based upon normative information, instead being personally set. Goals based upon the performance of others can be considered as being external goals; those which are personally set can be considered as being internal goals.

External goals (set by others)

Social Comparison theory suggests that people compare themselves to other individuals to whom they perceive themselves as being similar to (Festinger, 1954). These self-evaluations are, therefore, motivating (Harkins, 2001), thus supporting the perspective that normative information can positively affect performance. There is though the issue of the potential impact that norma-

tive information from unknown individuals may have on motivation and achievement.

Normative information indicating poor task performance in others may lead to an individual's self-evaluation of their potential performance. In the absence of other information being available, such as experience of the task, an individual will set their performance goals on normative information gained from the achievements of other people, whether those are high or low (Rakestraw & Weiss, 1981). However, if an individual has experience of the task, they will utilise this to set their own experience-based goals, rather than the normative information gained from others.

Internal goals (set by self)

Previous research has found that if individuals are able to set their own personal goals, they set them high, even after observing others displaying high or low performance on the same task (Early & Kanfer, 1985). However, whilst normative information did not influence personal goal-setting, Earley and Kanfer concluded that it did influence performance towards that goal (goal achievement) as despite setting their own goals, individuals who had observed high task performance in others still performed better than those who had observed low task performance in others. This highlights that the goal-setting effect can be over-ridden by the use of normative information. Importantly, the benefits to performance usually associated with having a goal can be extinguished if the individual is exposed to another person's poor performance on the same task.

Whilst normative information can clearly have an effect upon goal achievement, such information is not always available. This leaves the individual no choice but to set their own goals, whether having task experience or not. How the individual approaches a task and their resulting achievement on that task may, therefore, be influenced by their self-beliefs regarding their ability, in addition to, or instead of normative infor-

mation, depending upon whether the goals are set externally or internally.

Self-beliefs affecting goal achievement *Optimism*

Optimism (the belief in the ability to succeed) is considered a personality trait that leads individuals to expect positive outcomes (Lounsbury et al., 2005). The relationship between optimism and performance has been considered widely within the educational and workplace arenas, specifically focusing on research to identify the personality factors which influence individuals' achievement.

Rand (2009) explains that those individuals that have greater levels of optimism have the general attitude that they are likely to achieve their goals. This attitude in turn is thought to influence goal-focused behaviour, thus leading to goal achievement. Similarly, Scheier and Carver's (1985) theory of optimism focuses on the expectancy-value model of motivation (Carver & Scheier, 1999). This model begins with the expectation that behaviour is focused on achieving goals. These goals will have varying levels of 'value' to the individual, therefore motivating them to focus on the most important goals. The expectation of being likely to achieve a goal motivates individuals to focus on those goals rather than those they perceive to be less achievable.

Scheier and Carver (1985) suggested that people have a general approach and belief regarding their expectations of success and this seems to be fairly consistent throughout an individual's life-span. Being an optimist would encourage an individual to have a positive expectancy of goal achievement on a given task, therefore assisting in actually achieving the given goal successfully. Positive expectancies have been shown to be an important factor in one's determination to reach a goal (Ingledew et al., 2005; Locke & Latham, 2002; Wofford, Goodwin & Premack, 1992).

One's level of optimism can clearly be a motivating factor in achievement and this has been consistently demonstrated within an educational setting. For example, a positive relationship has been found between optimism and students' grade point averages (Lounsbury et al., 2003), and between optimism and cognitive ability (measured as performance on verbal and numerical reasoning tests) (Lounsbury et al., 2005).

However, such effects of optimism upon achievement may not just come from within. Lounsbury et al. (2005) suggest that students who display optimism may receive greater attention and positive reinforcement from their teachers/lecturers, thus leading to greater achievement. Nonetheless, the continued effect of optimism on performance beyond being a student has also been demonstrated, with optimism being one of a number of consistent personality traits predicting good performance in high school students and manufacturing plant workers alike (Lounsbury et al., 2004). From this, Lounsbury et al. suggest that optimists persevere in their pursuit of performance-related goals more than pessimists do.

Confidence

Whilst optimism can be described as a broad, general sense of confidence across one's lifespan (Scheier & Carver, 1985), one can also have a specific feeling of confidence defined as having a firm trust in one's ability - in a given task. According to Zarnoth and Sniezek (1997) optimism and confidence may share certain, undistinguished, similarities, but are nonetheless two distinct constructs. However, confidence is also likely to have an effect upon goal achievement. Whereas optimism then is a general lifelong positive outlook, a general expectation for the best, confidence may be based upon an unrealistic expectation, a lack of realism in one's abilities within a specific arena. However, it is argued that this is something that may be remediable.

Zorkina and Nalbonme (2003) considered the effect of induced confidence levels on performance on an intelligence test. Students were either told that the test was designed for students at elite universities

(low confidence condition) or high school students across the nation (high confidence condition); the test was the same in both conditions and manipulation checks indicated that the two groups of students did not differ in their general academic performance. It was found that students who were randomly allocated to the low confidence group performed more poorly on the test than students in the high confidence group. Zorkina and Nalbonme (2003) observe that 'regardless of how self-confident participants really were, simply telling them that the test was difficult affected their confidence about performing well on the test' (p.153). Hence, providing students with normative information affected their task, or goal, specific confidence.

However, as noted previously normative information is not always available. Here the level of confidence held in one's abilities may underpin how problems and tasks are approached. A lack of confidence in one's ability to succeed on a task will lead to low expectations for the outcome of the task, whereas one will have higher expectations for the outcome of tasks felt to be achievable, realistically or otherwise: overconfidence is prevalent in many arenas, including amongst students. Indeed, Kruger and Dunning (1999) found that students who scored lowest on certain tests were those most prone to overestimating their abilities on these topics. This indicates that it is important to be able to identify students who are overconfident, as well as those who are underconfident, in their academic beliefs in order to facilitate realistic learning strategies with a view to encouraging improved goal commitment and achievement in such students.

Although studies of student confidence in academic tasks usually focus upon the direct measure of confidence (e.g. How confident are you in this answer/that you can successfully achieve this task?), a number of studies have used psychometric scales to identify the more general construct of students' confidence in their academic self-concept. Students' academic confidence has been found

to be an important factor in their approaches to study (Sander & Sanders, 2003; Sanders & Sander, 2007). Academic confidence refers to students' confidence in how they will respond to the demands of studying at university (Sander & Sanders, 2003, 2006, 2009). Academic confidence is distinct from, but not necessarily unrelated to, aspirations for academic performance (Sander & Sanders, 2006, 2009).

Amongst new undergraduate students, Sander and Sanders (2003) have found there to be no correlation between academic confidence and academic performance during their first semester of study. However, by the end of their first year of study, students' academic confidence had been found to decrease. This effect was only significant for those students who predicted their grades to be either better or worse than the national average; the academic confidence of students who predicted their grade performance as average did not change during their first year of study.

Clearly then, academic confidence seems to be of relevance to goal-setting (i.e. predicted performance) and goal achievement (actual performance). However, the relationship between academic confidence and academic performance has not been fully explored; whilst the relationships between academic confidence and goal setting, and academic confidence and goal achievement have been considered, the interaction between academic confidence, goal-setting and goal achievement has not. In other words, what is the relationship between predicted performance and actual performance, and what is the role of academic confidence here?

The current study

This paper brings together two studies regarding goal achievement and the self-belief structures that may affect this. Study 1 takes a broad approach exploring how goals set by other people (normative information) affects goal achievement on an abstract anagram task. The influence of the general per-

sonality trait of optimism upon this is also considered. It is expected that optimism will interact with normative information to have a positive effect upon goal achievement. Optimists will rise to the challenge of a set goal, and be more successful in achieving that goal.

In Study 2 the focus moves to looking at 'real' goals, considering engagement and performance within the educational system, where goal-setting takes the form of self-predicted grades and goal achievement is actual grades. The more applied construct of academic behavioural confidence is considered in relation to goal achievement here. It is expected that students who are overconfident in their goal achievement will show high levels of the more general construct of academic behavioural confidence.

It is the aim of these two preliminary studies to identify some of the ways in which students' self-beliefs may affect student achievement, with a view to opening up further avenues of research that ultimately add to current research on student motivation and student achievement.

Study 1

Method

Participants

A number of undergraduate psychology students (N=121) drawn from two British universities participated. Participants ranged in age from 18 to 45 years (M= 21.26, SD=4.99). Ninety-four (78 per cent) of the participants were female and 27 (22 per cent) were male.

Materials

Optimism. Optimism was measured using the 12-item Life Orientation Test (LOT; Scheier & Carver, 1985), which assesses individual differences in general optimism versus pessimism. Participants rated their level of agreement to each item using a five-point scale ranging from 1='I agree a lot' to 5='I disagree a lot'. Four items are reverse scored with a further four being filler items not included in the scoring. Higher scores

indicate optimism; lower scores indicate pessimism. The LOT has good internal consistency (Cronbach's alpha=.76) and test-retest reliability (*r*=.79) (Scheier & Carver, 1985).

To allow for comparisons to be made between students who were high in optimism and those who were low in optimism, a median split was performed on the calculated LOT scores to create two groups; high optimism (consisting of participants whose LOT scores fell above the median score) and low optimism (consisting of participants whose LOT scores fell below the median score). Correlations to explore the relationship between optimism and goal achievement were conducted on the actual optimism scores rather than on the high/low optimism groupings.

Goal achievement. A cognitive task of difficult single solution anagrams was used to assess participants' performance on a set goal (goal achievement). A pilot study (*N*=28), where participants were asked to complete as many of the anagrams as possible within three minutes, was conducted to establish the goal; the goal for the main study was set as one standard deviation above the mean score from this group. Thus participants in the main study were instructed that their goal was to complete 20 anagrams in three minutes, derived from the mean score in the pilot study of 11.82 anagrams solved (*SD*=8.44).

Goal-setting. To determine the effect upon goal achievement of normative information, information was provided to participants regarding the performance of (hypothetical) others upon the cognitive task. In the low performing normative information condition, participants were told that others had found the goal difficult to achieve; in the high performing normative information condition, participants were told that others had found the goal easy to achieve. A separate control condition, where participants received no normative information, was also included. The same anagrams and goal were given in all three conditions, with the per-

centage of set goal achieved being the dependent variable.

Results

The relationship between total optimism scores and goal achievement was explored. Optimism was positively correlated with goal achievement when participants believed the goal to be difficult (low-performing norm), r(40)=.44, p=.005. The more optimistic the students were, the higher their goal achievement score was. Optimism was not related with goal achievement when participants believed the goal to be easy (high performing norm), r(41)=.20, p=.21. Additionally, when no normative information was provided (control condition), optimism was related with goal achievement, r(40) = -.006, p = .97.

To further explore the role of optimism on goal achievement in the presence of normative information, a 2 (optimism: high, low) × 2 (normative information: high performing, low performing) between subjects Analysis of Variance was conducted. Students in the two normative information conditions did not differ in their goal achievement, F(1,77)=.23, p>.05, but students high in optimism scored higher on goal achievement overall than students low in optimism, F(1,77)=5.71, p<.05. Table 1 (overleaf) shows the mean goal achievement scores.

The analysis also revealed a significant interaction between optimism and normative information, F(1,77)=4.08, p<.05. High optimism students gaining higher goal achievement scores than low optimism students under the low performing norm condition, t(38)=-.3.38, p<.05. The goal achievement scores of high optimism students did not differ from those of low optimism students under the high-performing norm condition, t(39)=-.245, p>.05.

Analyses on control group data, where no normative information was given, showed there to be no significant difference in goal achievement between students high (M=78.48, SD=46.03) and low in optimism (M=65.00, SD=40.81), t(38)=-.96, p>.05.

Table 1: Mean goal achievement scores across normative information conditions for high and low optimism students (standard deviation in parentheses).

	High-performing	Low-performing	Total
	norm	norm	
High Optimism	60.96 (44.43)	83.13 (45.05)	69.40 (45.44)
Low Optimism	57.67 (35.56)	43.96 (28.36)	49.23 (31.63)
Total	59.76 (41.00)	59.63 (40.40)	59.69 (40.45)

Summary of results

Optimism was related to goal achievement in Study 1 but only when the goal was believed to be difficult to achieve. When the task was achievable, or when no information was given about how achievable other people found the task to be, then students' levels of optimism did not affect their goal achievement. The results of Study 1 shall be returned to in the general discussion.

Study 2

Although providing interesting results, Study 1 used an abstract task. When researching student achievement in an educational setting, it is arguably more useful to consider goal achievement on real-world tasks. A common goal that students possess is their final grade (Rand, 2009). Indeed, Rand (2009) argues that student cohorts are advantageous to study as they provide the opportunity to assess students' expectancies on a uniform, continuous scale (in terms of their predicted grades) as well as giving an objective index of goal achievement (the students awarded grades).

However, when entering academia, students do not necessarily have normative information regarding the performance of others for which to strive. Study 2, therefore, looked at goal-achievement based upon personal goal-setting in an applied setting, that of new undergraduate students' grade expectancies, rather than normatively implied goals.

Studying goal achievement in an applied setting requires an applied measure of selfbelief; one that can be utilised as an effective intervention tool. A relevant measure of selfbelief here is the Academic Behavioural Confidence (ABC) scale (Sander & Sanders, 2003, 2009). The ABC is a global measure of academic confidence, defined previously in the introduction, and provides a general measure of a student's confidence in undertaking their course (Sander & Sanders, 2006, 2009). The ABC has the potential to be a useful intervention tool (Sander & Sanders, 2009). Hence, in Study 2 optimism was replaced with academic behavioural confidence to reflect the applied nature of the study.

Method

Participants

A number of first-year undergraduate psychology students (N=77) took part in the study during their first semester at a British university. Participants ranged in age from 18 to 48-years-old (*M*=20.34, *SD*=5.15). Sixtyone (79 per cent) of the participants were female and 16 (21 per cent) were male.

Materials

Academic performance. The university used in this study utilities a grading scheme which ranges from F0 to A16, with D5 being a pass. Grades A, B, C and D equate to first class, upper second, lower second and third class grades, respectively. Students were asked to give their grade predictions on each of five different pieces of assessment across two core modules. A mean predicted grade was then computed. At the end of the academic year each student's transcript was accessed to gather the actual grade received on each of the five pieces of assessment. A mean actual grade was then computed.

Academic confidence. Academic confidence was measured using the revised Academic Behavioural Confidence scale (Sander & Sanders, 2009). This 17-item scale has four factors (grades, verbalising, studying and attendance) and assesses differences amongst students 'in the extent to which they have a 'strong belief, firm trust, or sure expectation' of how they will respond to the demands of studying at university' (Sander & Sanders, 2009, p.19). Students indicated to what extent each question was descriptive of their academic confidence using a five-point Likert scale ranging from 1='Not at all confident' to 5='Very confident'.

To allow for comparisons to be made between students with different levels of academic confidence, total academic behavioural confidence scores were used to split students into groups of high confidence (mean scores of 4 and above, i.e. students who had predominantly responded 'very confident' to the ABC items), moderate confidence (mean scores of 3 to 3.99, i.e. students who had predominantly responded 'confident' to the ABC items), or low confidence (mean scores of less than 3, i.e. students who had predominantly responded below the midpoint range and can, therefore, be seen as indicating an absence rather than a presence of confidence). In this study 36 students fell into the high confidence group, 36 in the medium confidence groups, and two in the low academic behavioural confidence group. Given the low number of students in the low academic behavioural confidence group, this group was excluded from the analysis.

Results

The relationship between students' predicted and actual grades was explored. Students' grade predictions were positively correlated with their actual grades, r(77)=.37, p=.001. Furthermore, students' mean grade predictions (M=9.55, SD=1.73) did not significantly differ from their mean actual grades (M=9.74, SD=2.64), t(76)=.281, p=.78. Overall then students' academic

expectations matched their actual academic achievement.

The data was then analysed in relation to academic confidence. Overall academic confidence was not significantly correlated with students predicted grades, although a weak positive relationship can be seen, r(73)=.22, p=.06. Students' actual grades were negatively correlated with their overall academic confidence, r(73)=-.26, p=.02.

To further explore the role of academic behavioural confidence on goal achievement, a 2 (grade: predicted, actual) \times 2 (ABC: high, moderate) mixed ANOVA, with repeated measures on the first variable was conducted. A significant grade \times ABC interaction indicated differences between students with high ABC scores and those with moderate ABC scores, F(1,73)=5.94, p=.017.

As Table 2 (overleaf) shows, students with a moderate level of academic behavioural confidence were fairly well-calibrated in their grade predictions, with their predicted grade being only slightly lower than their actual grades. This difference was not significant, t(41)=-.103, p=.31. Students with a high level of academic behavioural confidence on the other hand were overconfident in their grade predictions, overestimating their academic performance by predicting a higher grade than their actual grade, t(32)=2.36, p=.02.

Summary of results

Overall students had a good awareness of their academic abilities, with their predicted grades being positively correlated with their actual grades. However, this was true for students who has a moderate level of academic behavioural confidence only; those who scored highly on academic behavioural confidence were overconfident in their academic abilities, overestimating their academic performance. These results shall be returned to in the general discussion.

Discussion

The results from these two preliminary studies indicate that self-beliefs do play a role

Table 2: Mean predicted and actual grades according to academic behavioural confidence (ABC) level (standard deviations in parentheses).

	Predicted grade	Actual grade
High ABC	9.66 (1.50)	8.69 (2.72)
Moderate ABC	9.55 (1.89)	9.93 (2.44)

in goal achievement. When a goal is expected to be difficult to achieve (based on goals set by others) it takes self-belief, specifically optimism, to achieve that goal. However, when a goal is set by one's self, the goal may be unrealistic and this may be related to a more general distorted self-belief, such as confidence.

Whilst previous research has indicated that being optimistic has a positive affect upon performance (Lounsbury et al., 2003, 2004, 2005), the results of Study 1 show that normative information is important in this effect. When normative information indicated that the task was easy, or when no normative information was provided, the task involved no pressure to achieve. In keeping with Scheier and Carver's (1985) theory of optimism within the expectancy-value model, the task arguably had little value; it was seen as achievable for all and, therefore, required little motivation to exert additional effort to attain the goal. Hence, one would not need to be motivated by optimism to succeed. However, when normative information indicated that the task was difficult, being optimistic may have motivated these individuals to try harder - the challenge of the task gave it value, the individuals' optimism gave them the motivation to rise to the challenge. In this way, the effect of optimism upon performance, as seen in other studies, is positive. On the other hand, being pessimistic may lead people to not try as hard as they have already reconciled themselves to not being successful on a task perceived as being difficult.

Whereas in Study 1, goal achievement was based upon an abstract anagram task, in Study 2 the applied goal of student grades was considered. Here, although the students as a whole had a good awareness of their aca-

demic abilities, making realistic grade predictions during their first year of study, the students who were the most confident of their ability to cope with the demands of academic life at the start of their undergraduate degree course were the students with the least realism in their predictions.

Overconfidence in a student cohort has been found before (Kruger & Dunning, 1999) and is clearly a very real problem. Sander and Sanders (2003) found the academic confidence of, arguably, overconfident and underconfident students to decrease during their first year of study. This may indicate that new students, entering the unknown environment of a university, make adjustments to their confidence to make it more realistic as they become more experienced within this environment. The data presented here is preliminary and part of an ongoing project, but it may be that the overconfident students who took part in Study 2 did similarly adjust their academic behavioural confidence to more realistic levels in the light of experience. However, if a student's achievements do not live up their expectations, then that student may become demotivated to the point that they may not feel able to continue with their course. Again this is something that our further explorations of the data shall consider.

Ongoing research

Study 1 indicated that normative information affected goal achievement of high and low optimism students when told that the task was found difficult by others. In Study 2 we did not provide normative information, exploring instead the effect of individually set goals. The two studies can therefore be seen as exploring different types of achieve-

ment goal: performance-approach goals and mastery-approach goals.

Verner-Filion and Gaudreau (2010) found that it is only performance-approach goals that mediate academic achievement. Whilst students may utilise mastery-approach goals in their academic approach, whereby they seek to 'attain task-based competence by mastering, learning and understanding material as much as possible' (pp.181-182), this approach is not associated with better academic performance. However, performance-approach goals are. Here the achievement goal is to outperform competitors, i.e. fellow students. It may be, therefore, that introducing normative information to students at the start of their study regarding the achievement of other students (i.e. xx per cent of students on this course will graduate with a first) may improve performance, giving students a goal to aim for and hopefully achieve. Our ongoing research thus combines aspects of Studies 1 and 2 to explore the effect of normative information upon students' goal achievement and student confidence.

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Student self-beliefs can be motivating in terms of goal achievement, but unrealistic self-beliefs have the potential to be demotivating. Having a goal to aim for can be beneficial, but the goal needs to fit in with the self-belief. When considering student goal achievement, the question is whether to encourage students to set more realistic goals or to foster more realistic self-beliefs to maximise students' motivation to achieve those goals remains to be seen. The answer to this may be beneficial to student motivation and success.

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